Northern Pintail Satellite-Telemetry Project
2004 Progress Report
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The Northern pintail satellite-telemetry project continued for a second year in cooperation with New York Cooperative Fish and Wildlife Research Unit at Cornell University (Drs. Sue Sheaffer and Rich Malecki). Following the successful results of the project's first year in South Carolina, the project was expanded to 5 other states in the Atlantic flyway for 2004.

With the project's expansion, cooperating states decided to meet in a central location before the field season began. State and federal personnel from New Jersey, Maryland, Virginia, North Carolina, South Carolina, and Florida and Dr. Rich Malecki from Cornell met in January 2004 at Edenton, North Carolina to discuss trapping techniques, satellite transmitter attachment and project protocol and practice attaching transmitters to captive-reared Northern pintails. A total of 41 transmitters (NC-15, SC-10, NJ-6, MD-4, VA-3, FL-3) were to be deployed in February 2004.

South Carolina Pintails

SCDNR personnel targeted pintails at trapping sites in cooperation with federal personnel and private landowners. A total of 8 hen pintails (6-Santee National Wildlife Refuge, 1-Santee Coastal Reserve, 1-ACE Basin) were captured and fitted with satellite transmitters in February 2004.

Seven of the 8 birds began spring migration. The exception was the hen marked at Santee Coastal Reserve (SCR). This bird was the lightest weight of the 8 pintails marked, and it remained at SCR until its signal was lost in mid April. Migration of the remaining 7 pintails was somewhat similar to the pintails marked in 2003.

All 7 pintails had left South Carolina by late March. Five of the pintails were in Ohio and Indiana, with the other 2 birds in New York east of Lake Ontario. By the end of April, the ACE Basin pintail had reached the northern border between North Dakota and Minnesota and 2 other birds were in eastern Minnesota. One bird remained on Lake Erie and the other 2 pintails were staged along the St. Lawrence River in eastern Canada. Contact was lost with the remaining duck in Ohio in late March.

As spring progressed the pintails spread out across the northern landscape before eventually converging on Hudson Bay. The lone exception was a pintail marked at Santee NWR that continued to head northeast and settled in Labrador before contact was lost in July. Additionally, 1 bird was lost during May in eastern Minnesota. A new feature for 2004 was a

UHF mortality sensor on each transmitter that allowed researchers to find lost transmitters. Once found, a transmitter could be refurbished and used again. North Carolina WRC personnel found some transmitters, including 1 hanging on a tree limb, from birds that died before migration. Personnel from Minnesota DNR were able to find South Carolina's transmitter lost in that state, but cause of mortality could not be determined.

Four pintails were on the southwest coast of Hudson Bay in June, 2 having reached there via James Bay and the other 2 leaving the prairies and over flying the Boreal Forest region of Ontario. As summer advanced, 3 of the 4 pintails remained along the Hudson Bay coast, spread from Ontario through Manitoba and as far north as Nunavut. The fourth pintail left Hudson Bay and flew to North Dakota. One bird was lost in late July along the Hudson Bay coast of Ontario.

The 3 remaining pintails were essentially stationary until October. One bird left Hudson Bay, and was shot at Saginaw Bay, Michigan in mid October. This transmitter was returned to Cornell University and the hunter did not report anything unusual about the marked pintail. Contact was lost with the second bird during the last week of October in Ontario just south of James Bay. Incidentally, 2 birds marked during the project's first year were lost during the same week of October 2003 near the same region. The third pintail that was located in North Dakota had moved to southern Minnesota by the first week of November. It was later harvested that week near Hutchinson, Minnesota.

The 20-gram transmitters are designed with a battery life of approximately 1 year. If the pintail survived it would allow us to track the bird through its spring migration and eventual fall migration back to the wintering grounds. One bird from 2003 survived to allow such tracking.

This pintail was marked in 2003 at Santee Coastal Reserve. Spring staging was on the Lake Erie marshes of northern Ohio. The bird spent most of the summer in North Dakota, before heading to Hudson Bay in late summer and remaining there until October. By November, the pintail was back in the marshes along Lake Erie, and returned to Santee Coastal Reserve the week before Christmas. The bird overwintered at SCR; it's last location when the battery expired was in Ohio on its spring migration.

South Carolina Mallards

The evolving technology of satellite telemetry and the project's success with Northern pintails made it plausible to think about work on other species. Given the importance of mallards to hunters and decline of this species in South Carolina, it was an obvious next choice.

Dr. Rich Malecki offered 6 refurbished Canada goose satellite transmitters to South Carolina if SCDNR could cover the cost of satellite time. The cost was incorporated in the pintail project's overall budget.

Mallards are a larger bird than pintails, and consequently, can carry a larger transmitter. The Canada goose transmitters weighed 30 grams and did not include a mortality sensor. They were set to turn on approximately every 6 days.

SCDNR personnel captured 6 hen mallards at 3 sites in cooperation with Federal personnel and private landowners. Two mallards were captured at Santee Delta WMA near McClellanville, 2 at Santee NWR near Manning, and 2 at Two Rivers Farm near Columbia. All birds were released at their original capture site.

By the third week of March all of the mallards had begun migrating north. One bird hopscotched through North Carolina before ending up in southern Michigan by mid April. Two other birds made a beeline to the Lake Erie region. The other 3 birds staged in Maryland and Virginia before moving north into New York and Ontario.

Accurate interpretation of satellite data can be difficult. If no movement occurs over a period of time, the bird has either died and its transmitter is still in a position to transmit, it shed its transmitter, or it's still alive but making only small movements within the error range of the satellite-telemetry accuracy.

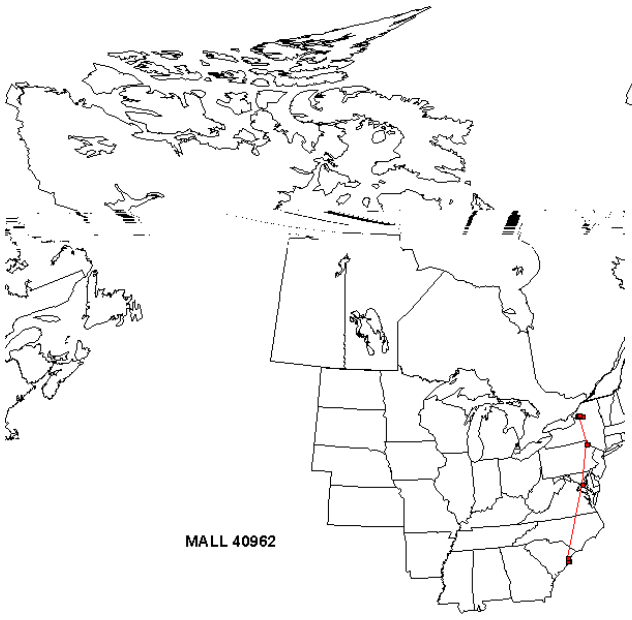
Five of the 6 mallards have shown no movement since summer. Further, signals are becoming sporadic, which is an indication that the battery might be weak. The last known locations for 5 mallards were northern Minnesota, southern Michigan, western New York, northern New York, and southwestern Ontario. The remaining mallard had moved into the Boreal Forest of northwestern Ontario by summer but was last located off of Georgian Bay near Sudbury, Ontario, in mid October.

Summary and 2005 Field Season

SCDNR personnel were successful in instrumenting 8 hen northern pintails and 6 hen mallards with satellite-telemetry transmitters during February 2004. The 2004 pintail data was similar to results from birds marked in 2003. The ducks began leaving the state in March, some on a northwestern route through the Great Lakes and others on a more northerly path through eastern Ontario and western Quebec. With the exception of 1 pintail that went to Labrador, the remainder spent most or all of the spring and summer on the coast of Hudson Bay. Fall migration began in October, as the birds headed back through spring staging areas.

The mallard data provided further insight into South Carolina's migratory mallard population. All 6 ducks were affiliated with the Great Lakes region or points farther west, which is similar to what banding data reveals. This has important management ramifications under Adaptive Harvest Management (AHM), the process that determines waterfowl hunting regulations. Additional data will increase our understanding of the state's mallard population.

The third and final year of the project is scheduled for 2005. Pledged funding will permit the purchase and monitoring of 8 satellite transmitters. Plans are to instrument both hen pintails and mallards in February 2005.



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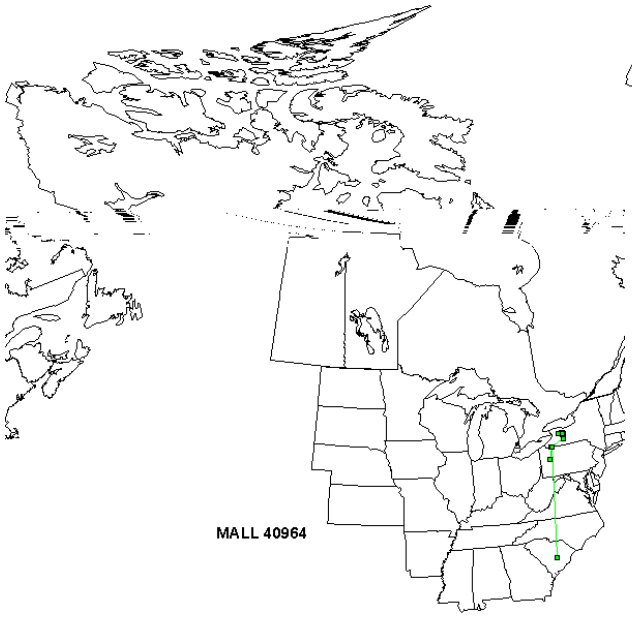

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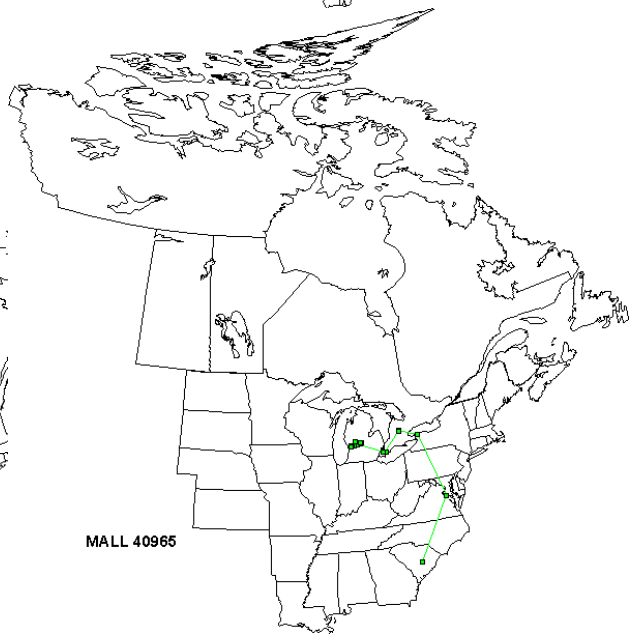

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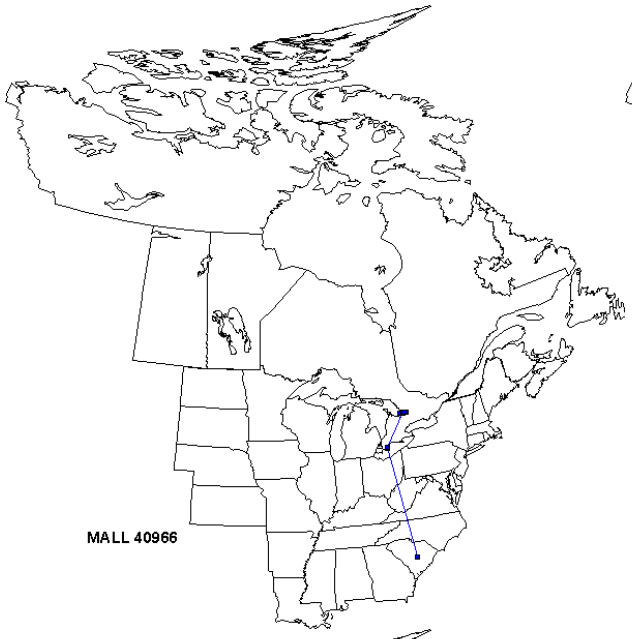

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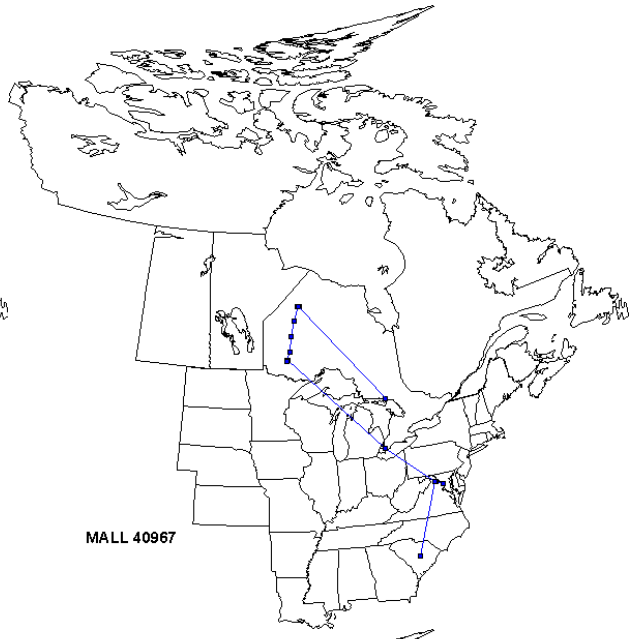

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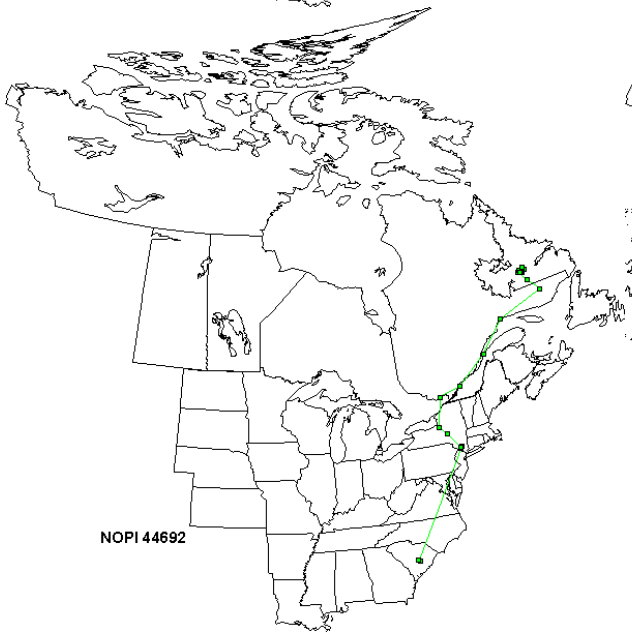

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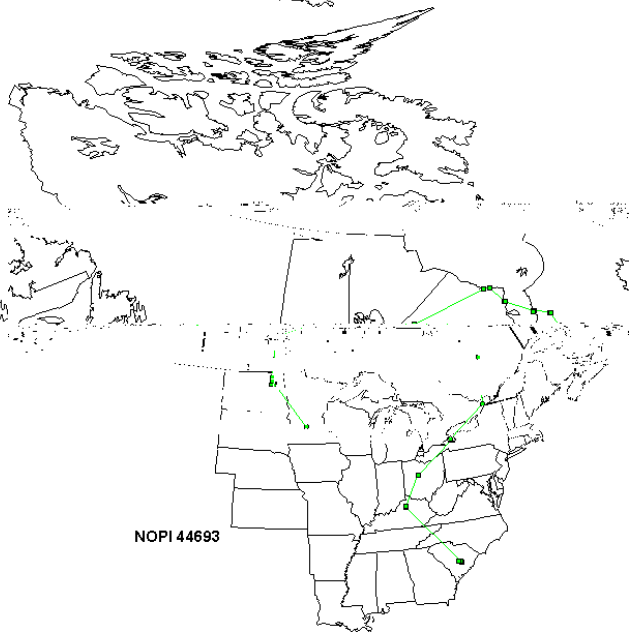

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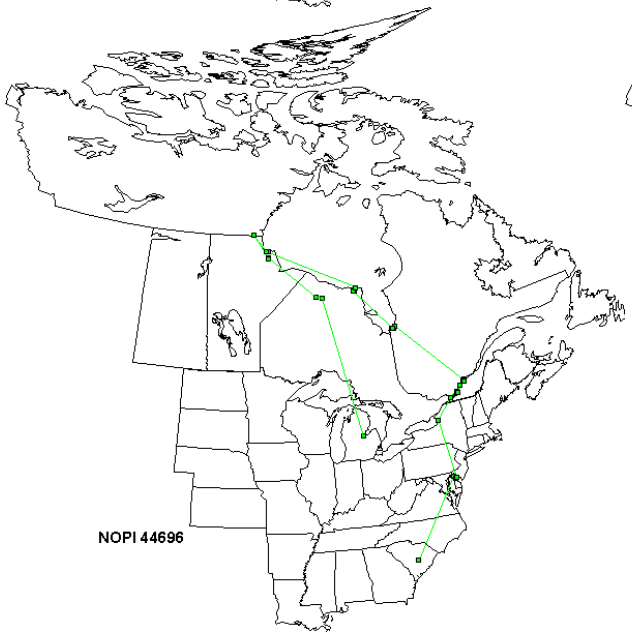

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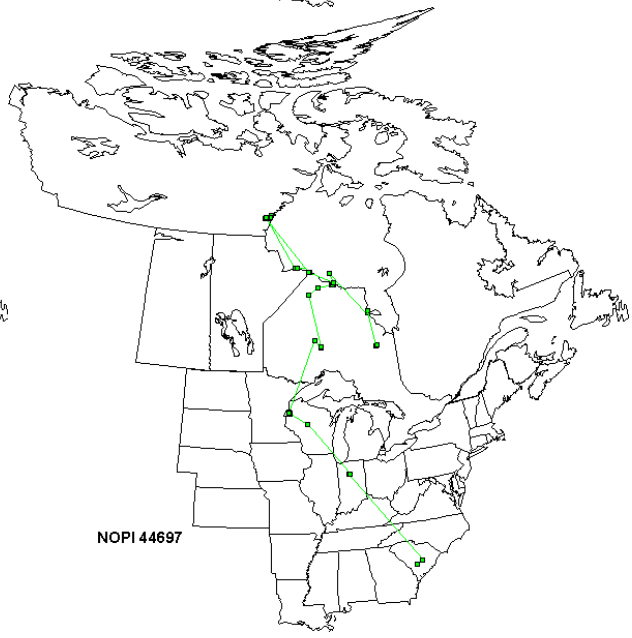

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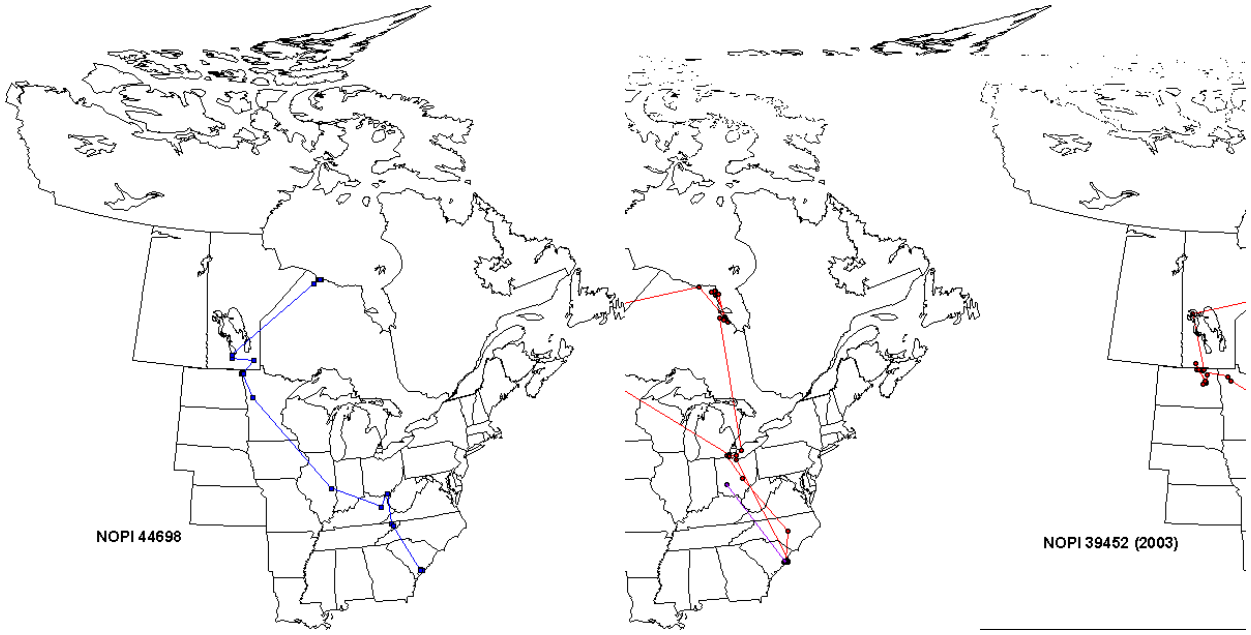
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